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National Department of Environmental Affairs
473 Steve Biko Road
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Dear Sir/Madam

**INDEPENDENT PEER REVIEW FOR THE PROPOSED NUCLEAR POWER STATION SITES
(‘NUCLEAR 1’) AND ASSOCIATED INFRASTRUCTURE – VISUAL IMPACT ASSESSMENT**

GIBB was appointed by Eskom Holdings Limited to compile the Environmental Impact Assessment for the *Proposed Nuclear Power Station Sites (Nuclear 1) and Associated Infrastructure*. Cave Klapwijk and Associates were appointed by GIBB to undertake the specialist Visual Impact Assessment (VIA) which formed part of the EIA process. This specialist study was completed in August 2010.

Aurecon South Africa was appointed by GIBB to do an independent peer reviewer on the VIA. The review process acts as a quality assurance instrument, ensuring credibility of the process; it is also used to impart authority and public confidence in the VIA findings. This VIA will be reviewed in terms of the following nine items as received by GIBB.

1. Assess the document in terms of its fulfilment of its terms of reference
2. Consider whether the report is entirely objective
3. Consider whether the report is technically, scientifically and professionally credible
4. Consider whether the method and the study approach is defensible
5. Identify whether there are any information gaps, omissions, errors
6. Consider whether the recommendations presented are sensible and present the best options
7. Consider whether there are alternative viewpoints around issues presented in the report and if these are clearly stated
8. Consider whether the style of report is written so as to make it accessible to non-specialists, technical jargon is explained and impacts are described using comparative analogies where necessary and;
9. Report on whether normal standards of professional practice and competence have been met

Review methodology

The above mentioned items were reviewed against the guidelines stated in the following best practice guideline documents:

- Oberholzer, B.2005.Guideline for involving visual & aesthetic specialists in EIA processes: Edition 1. CSIR Report No ENV-S-C 2005 053 F. Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs & Development Planning
- DEAT (2004) Overview of Integrated Environmental Management, information Series 4, Department of Environmental Affairs
- DEAT (2004) Overview of Integrated Environmental Management, information Series 13, Department of Environmental Affairs

- The Landscape Institute, Institute of Environmental Management and Assessment .2002. Guidelines for Landscape and Visual Impact Assessment Second Edition

Assessing the document in terms of its fulfilment of its terms of reference

The overall objective of the study was to assess the potential visual impacts of the Nuclear Power Station and associated infrastructure on the existing surrounding natural and socio economic environment for the construction, operation and decommissioning stages of the project. In order to comply with the objective the following was described and identified:

- Describe the visual character (existing land use, topography and vegetation)
- Identify the visual quality of affected elements
- Describe and evaluate the visual impacts of individual project components
- Determine the extent of visibility (day and night)
- Recommend mitigation measures

It is assumed that this specific terms of reference has been agreed upon by the EIA practitioner, the specialist, the proponent and the relevant authorities during the scoping phase of the project.

The area of affected land is shown on a topographical map and the visual character is described in terms of the topography, vegetation and land uses under section 2.2, 2.3 and 2.6. Particular landscape scenes (natural and man-made) are briefly sketched under point 2.5 and 2.7, defining the visual quality of the visible components. Physical characteristics, quantity, scale and design of project components are clearly stated under section 2.1 of the report and the visual impacts of such components is individually measured under section 3.2.

The extent of visibility is measured by conducting a viewshed analysis, included under section 3.3, the day time and night time visibility is discussed as required for a project of this scale and nature. General mitigation measures and mitigation for specific elements are discussed under section 4.0 and 3.27 of the report.

The document fulfils the terms of reference as stated.

Report objectivity

The assessment of the visual impacts of the proposed Nuclear 1 is complex since it is determined through a combination of quantitative (visibility) and qualitative (aesthetic value) criteria, therefore a VIA cannot be *entirely* objective in this sense. The report can be described as being *largely* objective as:

- The study was undertaken by a suitably qualified , experienced Landscape Architect;
- The methodology is clearly described;
- Clear defined and agreed terminology is used;
- The basis of each judgement is clearly stated;
- Comments from interested and affected parties have been included;
- Limitations with regards to data and technical information have been acknowledged; and
- The worst case scenarios have been considered, in terms of aspects of the proposal that have not been fully developed

Technical, scientific and professional credibility of the report

The VIA is technically credible as the assessment report:

- Is consistent in the use of specific terminology; and
- Have been orderly structured to focus upon the key issues of relevance to decision making.

The VIA is scientifically credible as the assessment report:

- Interprets and evaluates information; and
- Makes use of credible published resources

The VIA is professionally credible as the assessment report:

- Has been compiled by a professionally registered Landscape Architect which have extensive experience in visual assessment techniques

Method and study approach

The report methodology and study approach refers back to Oberholzer, B.2005. According to this guideline the basic components, listed under column A, should form part of the VIA methodology and approach. Column B gives reference to the study approach as set out in the reviewed VIA.

| Column A | Column B |
|---|---|
| Identification of issues and values relating to visual, aesthetic and scenic resources through involvement of I &AP's and the public | All relevant issues and comments have been stated under section 1.2.4. |
| Identification of landscape types, landscape character and sense of place, generally based on geology, landforms, vegetation cover and land use patterns. | An overall landscape impression was obtained during the site visits in 2007 and 2008, as stated under section 1.2.1 |
| Identification of viewsheds, view catchment area and zone of visual influence, generally based on topography. | Topographical and cadastral maps were used to record radial zones of visual impact, as stated under section 1.2.1. The viewshed was determined using digital topographical maps analysed by Geographic Information System algorithms. |
| Identification of important view points and view corridors within the affected environment, including sensitive receptors. | Residential areas, beach areas, provincial and national roads were defined as critical viewpoints under section 1.2.1 |
| Identification of distance radii from the proposed project to the various view points and receptors | Radial zones were chosen to include particular land uses and views as stated under section 1.2.1 |
| Determination of the relative visibility or visual intrusion of the proposed project. | The visual intrusion is described under section 1.2.1, in terms of the distance from the proposed development. The ratings of the zones are 0-2.5km (high) 2.5 -10km (medium) and > 10km (low) |
| Determination of the relative compatibility or conflict of the project with the surroundings. | The visual impact of the existing land use on the surrounding community was compared to that of the potential visual impact of the Nuclear Power Station. The significance of the visual impact difference is discussed in the context of the setting under section 1.2.1 |
| A comparison of the existing situation with the probable effect of the proposed project, through visual simulation, generally using photomontages. | A photo simulation was conducted from a critical viewpoint at Thyspunt, the detailed method statement has been clearly stated. |

According to the result it can be concluded that the adopted method and study approach is defensible as all basic components have been listed. Reasonable assumptions have been justified and known limitations, which might influence the accuracy and confidence of the VIA, have been listed and taken into account during the confidence ratings.

Information gaps, omissions and errors

All essential technical information, which includes structure heights, amount of ancillary infrastructure, infrastructure footprints, boundaries of the site project, earthworks associated with the project and construction phase facilities have been included under section 2 of the report.

All essential environmental information, which includes site location, geological information, landform information, topographical information, vegetation information, land use information and information with regards to viewers in the area have been included under section 2 of the report.

Both technical and information pertaining to the affected environment have been holistically described, meaning all aspects of the natural, cultural historical and scenic landscape has been included. There are no gaps or omissions with regards to information and the given information is relevant for identifying and predicting potential impacts.

Recommendations

According to Guidelines for Landscape and Visual Impact Assessment common visual recommendations should address the following:

- Sensitive location and siting;
- Site layout
- Choice of site level
- Appropriate form, materials and design of build structures
- Lighting
- Ground modelling
- Planting (screening); and
- Use of camouflage and disguise

All of the above recommendations have been addressed in the report. Recommendations include measures which can be implemented during the project planning stage, ensuring long term benefit. The report clearly states that a Landscape Architect should be appointed during the site detailed design phase, specifically focusing on the mitigation of negative effects of the final development. The presented recommendations suit the existing landscape character and focus on specific issues, therefore it can be regarded as being sensible, providing the best possible options.

Alternative viewpoints

There are no alternative viewpoints presented in the report.

Report style, technical jargon and comparative analogies

The report style is logical and orderly. Technical jargon is explained in the glossary and in the list of abbreviations. The executive summary gives an overview of the longer report, making the reader acquainted with a big body of material; thereafter the main report follows in a standard fashion from introduction, description of the baseline data, measuring the visual impact, to providing mitigation measures and recommendations.

Comparative analogies, such as the existing Koeberg Nuclear Power Station is mentioned, this is an effective analogy which can be used as its location (in the case of the Duynefontein site) scale and extent is comparable to the newly proposed Nuclear Power Plant.

Professional practice and competence

The standards of professional practice and competence have been met, Cave Klapwijk and Associates have been involved in the field of visual assessments for more than 20 years, and one of its founding members is registered as a professional landscape architect with the SACLAP.

The VIA positively fulfils all of the nine items as stated. Please do contact us should you have any queries or require any additional information.

Yours sincerely



REUBEN HEYDENRYCH
Pr Larch (Associate)



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Pr Larch

Copies: Tashir Naicker